

IDAHO DEPARTMENT OF FISH AND GAME

**ANNUAL REPORT
NAMPA HATCHERY**

1992

Prepared by:

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INTRODUCTION

Nampa Hatchery is a resident trout rearing facility located two miles south of Nampa. The water supply includes eight artesian wells with a combined flow of 18 to 40 cfs of 59°F water. Built in 1975 and purchased by the Idaho Department of Fish and Game (IDFG) in 1982, fish rearing facilities consist of: a hatchery/crew quarters building with 4 upwelling incubators and 4 early rearing vats; outside rearing tanks include 16 fry raceways, 3 fingerling raceways, and 10 production raceways. Up to 16 additional upwelling incubators can be used in the fry raceways to increase egg incubating capacity. A settling pond treats flows from the production units before discharge into Wilson Drain.

FISH PRODUCTION

Nampa Hatchery stocked 2,486,995 fish totaling 243,156 pounds during 1992. Broodstock rearing is included in the total number and pounds produced. Rainbow trout and Kamloops Oncorhynchus mykiss comprised 83% of the hatchery's production. In addition, brown trout Salmo trutta, and Lahonton cutthroat trout Oncorhynchus clarki henshawi were produced (Table 1).

Total production, cost per fish, and cost per pound of each species/strain is listed in Tables 2, 3, and 4.

A total of 2,603,528 eggs were received during 1992 (Table 5).

Brown Trout

Nampa Hatchery received 200,000 brown trout eggs from Saratoga National Fish Hatchery in Saratoga, Wyoming on November 11, 1991. Early survival rate remained good with 70.5% surviving to final plant. This is the second consecutive year since changing fish culture techniques for brown trout that overall survival was above 70%. Additional fish health information on brown trout is presented in the fish health section. A total of 141,141 brown trout fingerlings were stocked between May and September.

Lahonton Cutthroat Trout

During the 1992 fish year, Nampa Hatchery stocked 279,212 Lahonton cutthroat trout into lakes and reservoirs located in Regions 2, 3, 5, and 6. All Lahonton eggs received this year came from the Omak Hatchery in Washington.

HATCHERY IMPROVEMENTS

Several important improvements were implemented at Nampa Hatchery during 1992:

- 1) A new 100,000 kw backup generator was installed increasing the backup capability by 40,000 kw. This will enable us to replace three 7.5 hp pumps with 20 hp, thereby increasing the total flow to the hatchery.

- 2) The tail race system to the A-Ponds was modified by adding four additional drains. The A-Ponds can now be totally drained and cleaned individually without water back-flushing into adjacent ponds.
- 3) A total of 2,500 feet of air diffuse tubing was purchased for use in a production raceway cleaning system. The system will be completed by mid-1993.
- 4) Metal lids were fabricated and installed on the two packed columns located on the south end of the hatchery.
- 5) The three major capital purchases made were: a new front-end loader for the Kubota tractor; three new fresh flows; and a chest freezer for daily mortality.

PERSONNEL CHANGES

Two changes in personnel were made during 1992. Todd Garlie was promoted to Superintendent I at the Grace Fish Hatchery, and Rob Morris transferred to Nampa to fill Todd's vacancy, Walt Rast transferred to the Hagerman Hatchery, and Rick Alsager transferred from the Sawtooth Hatchery to replace Walt.

FISH HEALTH

Fish health was generally good at Nampa hatchery during 1992. Coldwater Disease Flexibacter psychrophila and Bacterial Gill Disease were the most prevalent fish diseases encountered (Table 6). Most fish were fed a prophylaxis of Oxytetracycline Hydrochloride at a level of 200 grams per 100 pounds of feed for 10 days, which minimized the outbreaks of Coldwater Disease. Bacterial Gill Disease occurred during periods of low flows and high densities. Treatment for Coldwater Disease consisted of feeding Oxytetracycline at 200 to 400 grams per 100 pounds of feed.

Outbreaks of Bacterial Gill Disease were treated with Chloramine-T at a level of 10 ppm.

A significant mortality spike occurred in brown trout fingerlings at approximately 40/lb. The fish hatchery pathologist was called to investigate. Although lab results were inconclusive, the outbreak was believed to be feed-related. Culture techniques were modified this year to increase the survivability of Duncan River Kamloop trout. The fish were started on Biodiet softmoist feed, shade covers were installed, and automatic belt feeders were used. Survival increased 28%; from 32% to 60%. Bird predation continues to be a problem at Nampa Hatchery. The bird netting slated for construction during 1993 should alleviate this problem.

FISH TRANSFERRED

A total of 61,300 (9-inch plus) rainbow trout weighing 19,400 pounds were transferred to the Clearwater Hatchery and stocked in Region 2 waters. In addition, 66,160 (9-inch plus) rainbow trout were transferred to the McCall Hatchery and 5,000 (6-inch) Brown Trout were transferred to the Sandpoint Hatchery. Nampa Hatchery also transferred 2,965 broodstock weighing 8,300 pounds to the Hayspur Hatchery. Surplus broodstock were combined with catchable size trout and stocked in Region 3 waters.

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Nampa Hatchery is also responsible for coordinating the transfers of surplus broodstock, primarily rainbow trout, from the Ennis National Fish Hatchery to various bodies of water throughout Idaho. Transport operators hauled a total of 27,222 surplus broodstock weighing 32,610 pounds.

FISH SPAWNING

Deadwood (Early Kokanee)

Nampa Hatchery continues to operate the early kokanee salmon trapping and spawning project at Deadwood Reservoir. Deadwood Reservoir remains a viable source for kokanee eggs. Trapping of kokanee adults started on August 12, 1992 and ended on September 25, 1992. All fish were spawned at the trap site.

An egg yield of 5,237,385 eggs were taken from 35,393 females for a fecundity rate of 148 eggs/female (Table 7). Average total length of kokanee was 208.45 mm (Figure 1). Fecundity along with average total length continued to decline significantly in 1992 (Figure 2). After three years of improvement, egg eye-up decreased from 90% to 64%. Several factors may have influenced such a significant drop in eye-up: a 2-inch decrease in length coupled with a 50% decrease in fecundity; increased travel time, travel time nearly doubled when eggs were shipped to Cabinet Gorge Hatchery; and new personnel who had never spawned kokanee before played a role in poor eye-up as well.

Deadwood early spawning kokanee continue to maintain a virus-free disease history. Results from pathological examinations in 1992 were again negative (Table 6).

Eggs were shipped to both the Mackay and Cabinet Gorge hatcheries via fixed-wing aircraft. Shipping techniques were identical to those used during 1991. As in 1991, IDFG contracted the flying service with McCall Air Taxi. Surplus adult kokanee were out-planted this year. Both Region 3 and Hayspur Hatchery personnel assisted in hauling the surplus fish. A total of 7,920 kokanee adults were released into the South Fork of the Boise River upstream from Anderson Ranch Reservoir.

FISH FEED

A total of 256,799 pounds of feed was purchased during 1992 from Rangen, Inc. and Bioproducts. The overall feed conversion was 1.1 pounds of feed to produce 1 pound of fish. Table 8 gives the breakdown of feed costs.

PUBLIC RELATIONS

Since the completion of the Wilson Springs Ponds, most of the special fishing privileges on the settling pond were canceled. However, groups like the disabled Vets and significantly handicapped patients from the Idaho State School, will continue to fish the settling pond upon their request. Nampa Hatchery continues to provide guided tours to school and scout groups during the spring and summer months.

Prior to 1992, Nampa Hatchery provided a conference room for public use. As a result of expanding numbers in research personnel, the conference room has been changed to office space.

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Table 1. Fish requested and produced, 1992.

| Species & size | | Production goal | Actual production | Percentage of goal achieved |
|-------------------|------------|--------------------|----------------------|-----------------------------------|
| Rainbow | 8+ inches | 370,000 | 330,423 | |
| Kamloop | 8+ inches | 0 | 106,267 | 118 |
| Brown | <6 inches | 80,500 | 141,141 | 175 |
| Lahonton | <6 inches | 245,900 | 279,212 | 114 |
| Kamloop | <8 inches | 699,500 | 771,248 | 110 |
| Rainbow | <8 inches | 1,053,000 | 855,668 | 81 |
| Rainbow | Broodstock | 3,000 | 3,036 | 100 |
| Totals | | 2,448,900 | 2,486,995 | 101 |

Table 2. Catchable production at Nampa Hatchery, 1992.

| Species/ strain | Source & date | Number received | Yield number | yield pounds | % survival egg to plant | Destination | produce and stock | Cost/ fish | Cost/ pound |
|--------------------|--------------------|--------------------|-----------------|-----------------|-------------------------------|--------------|----------------------|---------------|----------------|
| Rainbow/R4 | Mt. Lassen 6/91 | 225,000 | 173,637 | 66,588 | 77 | Region 1,2,3 | 65,000.00 | 0.374 | 0.976 |
| Rainbow/RE | Emis 7/90 | NA | 21,696 | 13,137 | NA | Region 3 | 2,000.00 | 0.092 | 0.152 |
| Rainbow/R1 | Emis 9/91 | 175,590 | 135,090 | 51,092 | 76 | Region 2,3,6 | 51,000.00 | 0.378 | 0.998 |
| Kamloop/K1 | Gloyds* | 527,240 | 106,267 | 40,884 | 60 | Region 2,3,6 | 44,500.00 | 0.372 | 0.946 |
| Totals | | | 436,690 | 171,701 | | | 162,500.00 | 0.372 | 0.946 |

*This lot was also used for fingerlings.

Table 3 Fingerling production at Nampa Hatchery, 1992.

| Species/ strain | Source & date | Number received | Yield number | Yield pound | % survival egg to plant | Destination | produce and stock | Cost/ fish | Cost/ pound |
|--------------------|----------------------|--------------------|-----------------|----------------|-------------------------------|----------------|----------------------|---------------|----------------|
| Rainbow/R9 | Hayspur 11/91 | 700,000 | 552,455 | 21,160 | 79 | Region 3 | 27,000.00 | 0.049 | 1.276 |
| Browns/Bn | Saratoga 11/91 | 200,000 | 141,141 | 6,504 | 70.5 | Region 1,3,4,5 | 9,000.00 | 0.064 | 1.384 |
| Kamloop/K6 | Ennis 2/92-3/92 | 900,000 | 532,545 | 7,199 | 60 | Region 3 | 15,000.00 | 0.028 | 2.084 |
| Rainbow/R7 | Creston 3/92-4/92 | 635,000 | 303,213 | 2,330 | 59 | Region 3 | 3,000.00 | 0.010 | 1.288 |
| Cutthroat/C6 | Omak 5/92 | 400,000 | 279,212 | 5,323 | 69 | Region 3,4,6 | 7,500.00 | 0.027 | 1.409 |
| Kamloop/K1 | Gloyds 10/91-1/92 | 485,000 | 238,703 | 19,000 | 66 | Region 2,3,6 | 26,000.00 | 0.109 | 1.368 |
| Totals | | | 2,047,269 | 61,523 | | | 87,500.00 | 0.043 | 1.422 |

Table 4. Broodstock production at Nampa Hatchery, 1992.

| Species/ strain | Source & date | Number received | Yield number | Yield pounds | % survival egg to plant | Destination | produce and stock | Cost/ fish | Cost/ pound |
|--------------------|------------------|--------------------|-----------------|-----------------|-------------------------------|-------------|----------------------|---------------|----------------|
| Rainbow/R9 | Hayspur | 4,966 | 3,036 | 9,932 | NA | Hayspur | 5,200 | 1.71 | 0.523 |

Broodstock production for 1992 represents only broodstock transferred off station during the year. Broodstock transferred to Nampa Hatchery during 1992 and that will be transferred back to Hayspur in 1993 will be accounted for in the 1993 annual report.

Table 5. Eggs received at Nampa Hatchery, January 1, 1992 to December 31, 1992.

| Species/ strain | Date received | Source | Number | Destination | Expected yield | Cost/ 1,000 |
|--------------------|-------------------|----------|-----------|----------------|-------------------|----------------|
| Kamloop/K1 | 1/15/92 | Gloyds | 300,000 | Region 2,3 | 180,000 | 10.00 |
| Rainbow/R7 | 2/13/92 | Creston | 160,000 | Region 3 | 94,400 | N/C |
| Kamloop/K6 | 2/24/92 | Ennis | 300,000 | Region 3 | 180,000 | N/C |
| Kamloop/K6 | 3/3/92 | Ennis | 400,000 | Region 3 | 240,000 | N/C |
| Rainbow/R7 | 3/6/92 | Creston | 100,000 | Region 3 | 59,000 | N/C |
| Kamloop/K6 | 3/10/92 | Ennis | 200,000 | Region 3 | 120,000 | N/C |
| Rainbow/R7 | 3/13/92 | Creston | 375,000 | Region 3 | 221,250 | N/C |
| Cutthroat/C6 | 4/27/92 5/4/92 | Omak | 400,000 | Region 3,4,6 | 279,212 | N/C |
| Brown/BN | 12/3/92 | Saratoga | 15,840 | Region 1,3,4,5 | 8,500 | N/C |
| Rainbow/R9 | 12/8/92 | Hayspur | 352,688 | Region 3,5 | 246,882 | N/C |
| Totals | | | 2,603,528 | | 1,629,244 | |

Table 6. Pathology test results, Nampa Hatchery, 1992.

| Species/strain | Sample date (92) | VH | VP | VE | BK | BF | BR | BC | PX | PW | PC | PI | Comments |
|-----------------------|------------------|----|----|----|----|----|----|----|----|----|----|----|--|
| Erwin Ennis/RE | 1/23 | - | - | - | - | - | - | - | - | - | | | VE 0/20, BK (FAT) 0/20, PX 0/20, PW 0/05 biro 0/10, bacty nsg. |
| Mt. Lassen/R4 | 1/23 | | | | - | | | | | | | | BK (FAT & ELISA) 0/10. |
| Mt. Lassen/R4 | 1/23 | | | | | | | | | | | | |
| Gloyd Springs Kamloop | 1/28 | | | | - | | | | - | | | | BK (FAT) 0/1, PX 0/1. |
| Mt. Lassen/R4 | 2/14 | | | | | | | | | | | | |
| Mt. Lassen/R4 | 2/14 | | | | | | | | | | | | |
| Erwin | 3/17 | | | | | | | | | | | | |
| Gloyd Springs Kamloop | 3/26 | | | | | | | | | | | | |
| Saratoga BT | 4/1 | - | - | - | | - | - | - | | | | | bacty 2/4 A.hydrophila, viro 0/10, VE 0/5. |
| Saratoga BT | 4/1 | | | | | | | | | | | | |
| Gloyd Springs Kamloop | 4/1 | | | | | | | | | | | | |
| R9 | 4/16 | - | - | | | | | | | | | | 0/10. |
| Gloyd Springs Kamloop | 4/29 | - | - | | - | | | | | | | | BK (FAT) 0/12, viro 0/10. |
| Eagle Lake RBT | 5/11 | | | | | - | - | + | | | | | BC 3/4 (low, brain). |
| Erwin | 6/8 | - | - | | | - | - | - | | | | | bacty 0/4, viro 0/4. |
| Eagle Lake RBT | 6/8 | - | - | | | - | - | - | | | | | bacty: A.hydrophila (heavy), viro 0/10. |
| Eagle Lake RBT | 6/22 | - | | | | - | - | + | | | | | viro 0/10, bacty BC low, Aeromonas sp. (OTC resistant). |
| Deadwood kokanee | 9/14 | - | - | | - | | | | | - | | | BK (ELISA) 0/60, viro 0/30, viro 0/10, BK (FAT) 0/10, 6/8 A.hydrophila, 4/8 Pseudomonas spp. both OTC resistant. |

Table 7. Kokanee egg take at Deadwood Reservoir, 1992.

| Take | Spawn date | Females | Green eggs | Eyed egos | % Eve |
|--------|------------|---------|------------|-----------|-------|
| 1 | Aug 27 | 700 | 106,712 | 58,692 | 55 |
| 2 | Aug 31 | 1,632 | 249,951 | 138,800 | 56 |
| 3 | Sep 2 | 2,001 | 296,966 | 215,145 | 77 |
| 4 | Sep 4 | 3,561 | 575,633 | 361,444 | 62 |
| 5 | Sep 6 | 4,572 | 696,686 | 453,543 | 65 |
| 6 | Sep 8 | 7,762 | 937,909 | 594,634 | 63 |
| 7 | Sep 9 | 4,691 | 707,127 | 453,976 | 64 |
| 8 | Sep 10 | 5,118 | 757,669 | 487,939 | 64 |
| 9 | Sep 11 | 3,305 | 534,596 | 354,437 | 66 |
| 10 | Sep 14 | 2,051 | 374,136 | 233,461 | 62 |
| Totals | | 35,393 | 5,237,385 | 3,352,071 | 64 |

Table 8. Fish feed used during Fish Year 1992 and Nampa Hatchery.

| Size | Source | Pounds | Cost/ pound | Cost |
|--------------------|---------------|---------|----------------|-----------|
| #1 Dry | Rangens | 150 | 0.4400 | 66.00 |
| #1 Dry | Rangens | 500 | 0.5060 | 253.00 |
| #2 Dry | Rangens | 4,150 | 0.4400 | 1,826.00 |
| #2 Dry/TM | Rangens | 900 | 0.5060 | 455.40 |
| #2 Dry | Clear Springs | 50 | 0.3590 | 17.95 |
| #3 Dry | Rangens | 9,750 | 0.4400 | 4,290.00 |
| #3 Dry/TM | Rangens | 1,000 | 0.5060 | 506.00 |
| #4 Dry | Rangens | 24,850 | 0.2850 | 7,02.25 |
| #4 Dry/TM | Rangens | 800 | 0.5060 | 404.80 |
| Coarse Crumbles | Rangens | 37,280 | 0.2800 | 10,443.40 |
| Coarse Crumbles/TM | Rangens | 950 | 0.5060 | 480.70 |
| 1/8" Pellet | Rangens | 65,301 | 0.2300 | 15,019.23 |
| 1/8" Pellet/TM | Rangens | 7,050 | 0.4120 | 2,904.88 |
| 5/32" Pellet | Rangens | 78,120 | 0.2300 | 17,967.60 |
| 5/32" Pellet/TM | Rangens | 4,200 | 0.4875 | 2,047.50 |
| 1/4" Brood | Rangens | 12,700 | 0.2830 | 3,599.50 |
| Soft-Moist 1/32" | Rangens | 528 | 0.6550 | 345.84 |
| #1 | Bio Products | 660 | 0.8273 | 546.00 |
| #2 | Bio Products | 176 | 0.8182 | 144.00 |
| #2/TM | Bio Products | 1,144 | 1.0450 | 1,195.54 |
| #3 | Bio Products | 1,540 | 0.8312 | 1,280.00 |
| 1.0 mm | Bio Dry 1000 | 50 | 0.4000 | 20.00 |
| 1.3 mm | Bio Dry 1000 | 50 | 0.3450 | 17.25 |
| 1.5 mm | Bio Dry 1000 | 50 | 0.3450 | 17.25 |
| 2.5 mm | Bio Dry 1000 | 50 | 0.23 | 11.50 |
| 1.3 mm | Bio Dry 4000 | 1,300 | 0.52 | 676.00 |
| 1.5 mm | Bio Dry 4000 | 1,000 | 0.52 | 520.00 |
| 2.5 mm | Bio Dry 4000 | 2,500 | 0.48 | 1,200.00 |
| Totals | | 256,799 | 0.2856 | 73,337.59 |

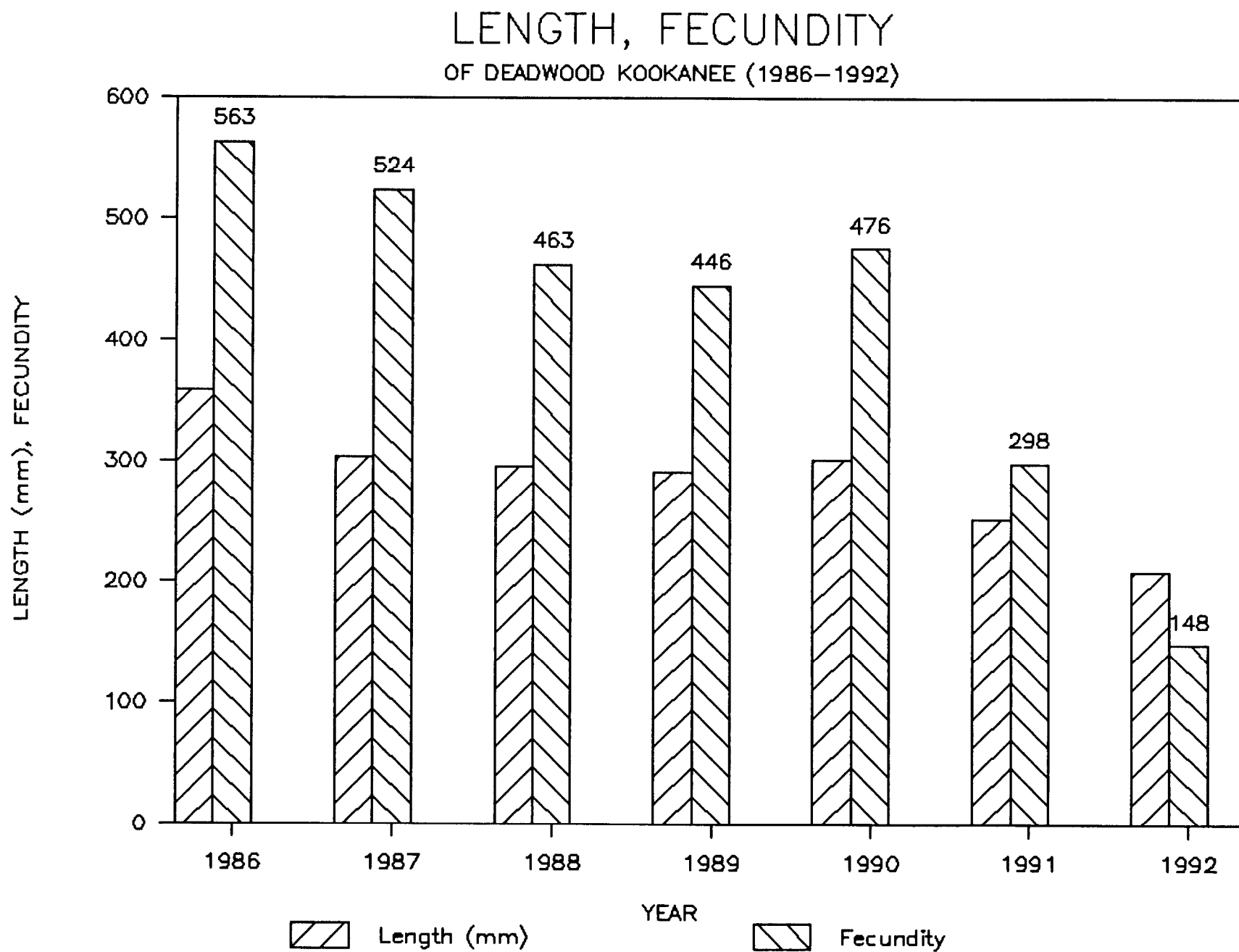


Figure 1. Average total lengths of kokanee, Deadwood Reservoir, 1992.

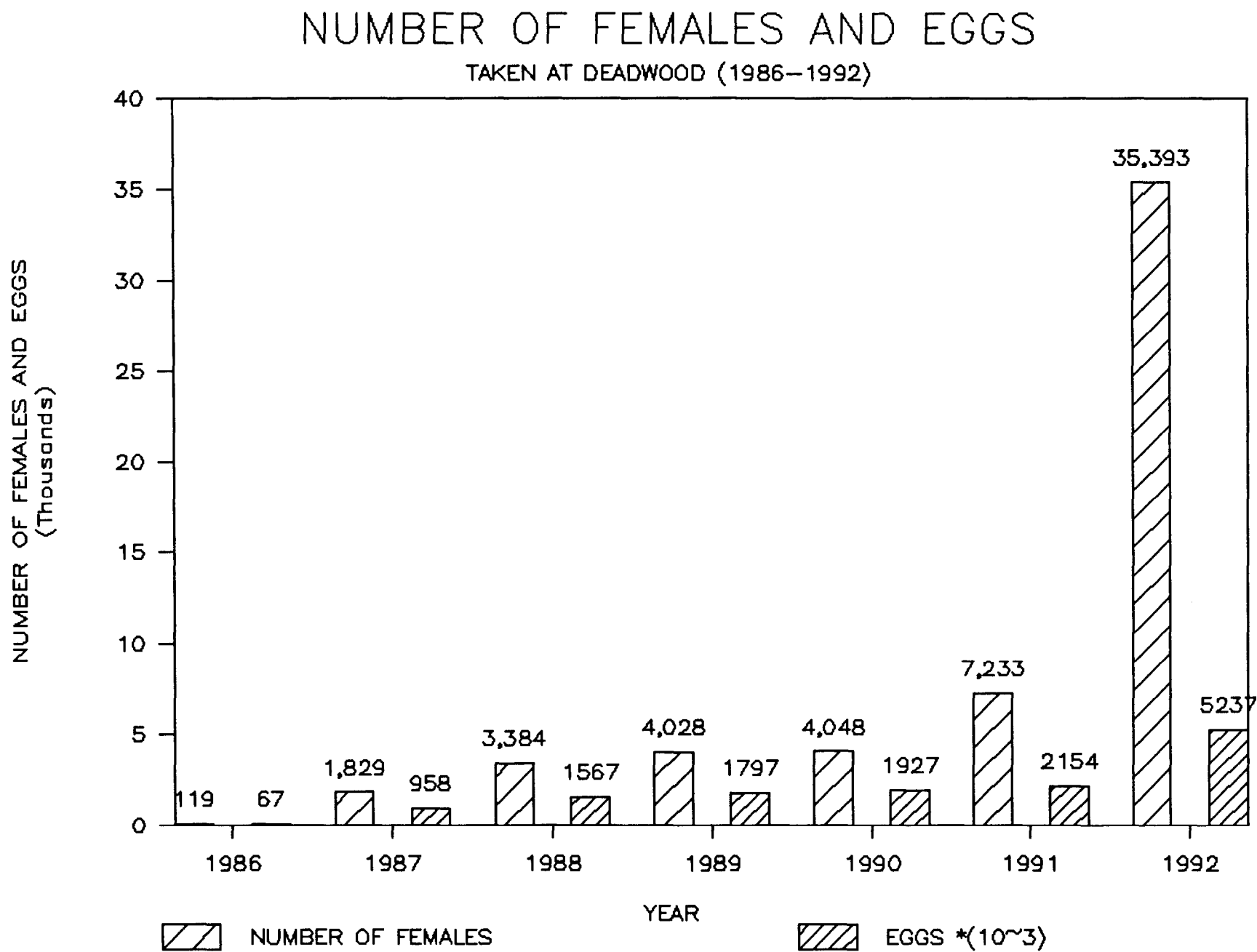


Figure 2. Comparison of length and fecundity of Deadwood kokanee, 1992.

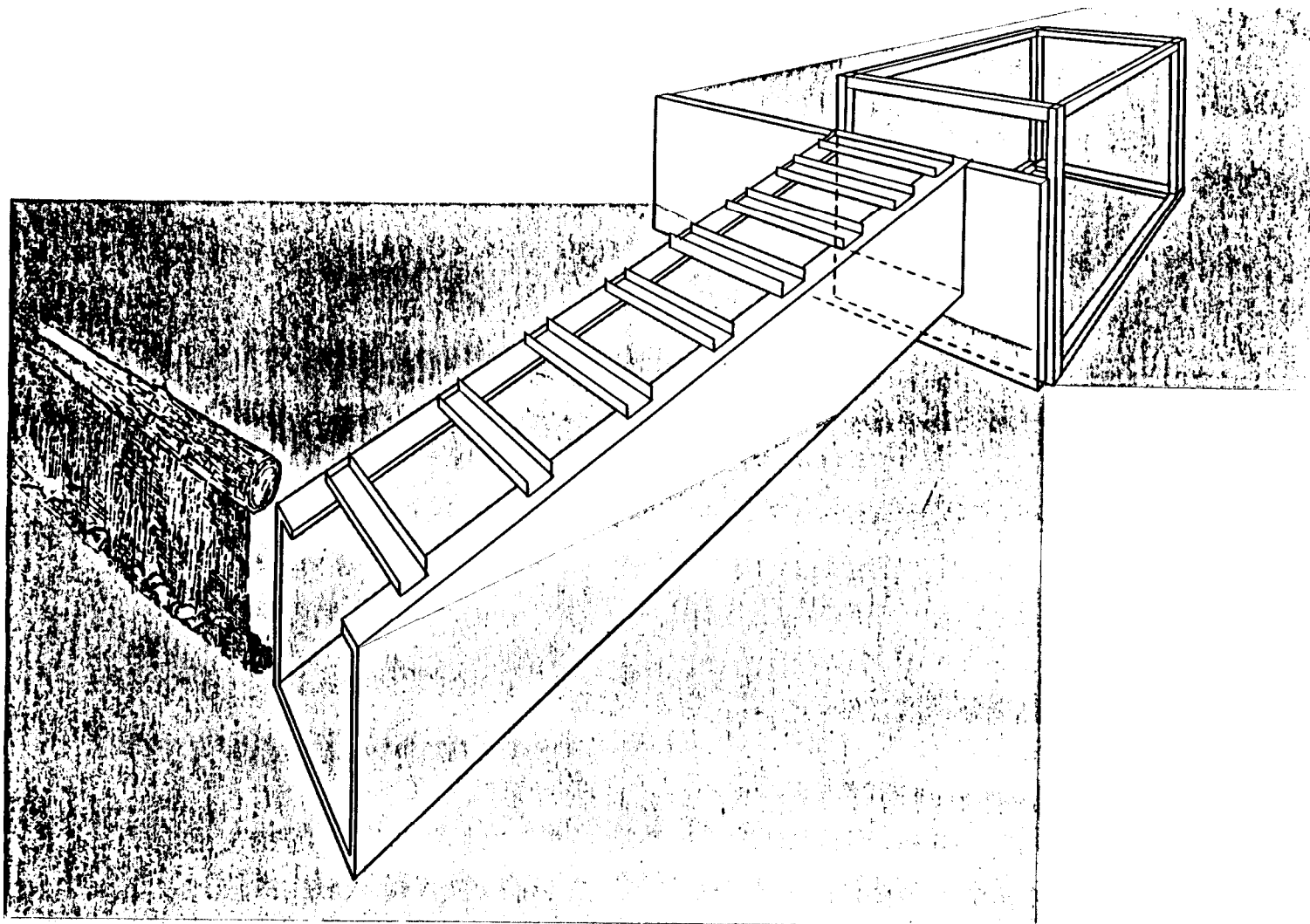


Figure 3. Steep pass fish ladder and weir used to trap kokanee, 1991.

